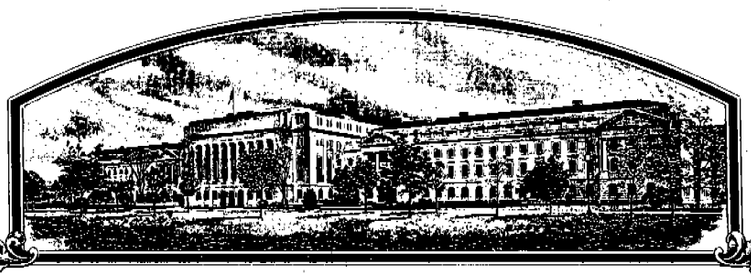

No. 7500009

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

International Seeds, Incorporated

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF seventeen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

PERENNIAL RYEGRASS

'Derby'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington *this* 18th *day of* November *in the year of our Lord one thousand nine hundred and* seventy-six

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

FORM GR-470
(12-15-72)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

FORM APPROVED
OMB NO. 40-R3712

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

1. VARIETY NAME OR TEMPORARY DESIGNATION	2. KIND NAME	FOR OFFICIAL USE ONLY
DERBY (ISI-72E)	Perennial ryegrass	PV NUMBER 7500009
3. GENUS AND SPECIES NAME	4. FAMILY NAME *(Botanical)*	FILING DATE 8.15.74 / TIME 11 A.M.
Lolium perenne	Gramineae	FEE RECEIVED $250.00 $250.00 $250.00 / BALANCE DUE $ — $ — $
	5. DATE OF DETERMINATION: July 30, 1973	

6. NAME OF APPLICANT(S)	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*	8. TELEPHONE AREA CODE AND NUMBER
International Seeds, Inc.	P.O. Box 168 Halsey, Or 97348	503-369-2251

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*	10. STATE OF INCORPORATION	11. DATE OF INCORPORATION
Corporation	Oregon	July 1, 1972

12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers:

Dr. G. W. Pepin
Research Director
International Seeds, Inc.
Box 168
Halsey, Or 97348

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Botanical Description of the Variety
- [X] 13C. Exhibit C, Objective Description of the Variety (RE)
- [X] 13D. Exhibit D, Data Indicative of Novelty
- [X] 13E. Exhibit E, Statement of the Basis of Applicant's Ownership

14A. Does the applicant(s) specify that seed of this variety be sold by variety name only as a class of certified seed? *(See Section 83(a). (If "Yes," answer 14B and 14C below.)* [ ] YES [X] NO

14B. Does the applicant(s) specify that this variety be limited as to number of generations? [ ] YES [ ] NO

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? [ ] FOUNDATION [ ] REGISTERED [ ] CERTIFIED

The applicant declares that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable.

The undersigned applicant(s) of this sexually-reproduced novel plant variety believes that the variety is distinct, uniform, and stable as required in Section 41 and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant is informed that false representation herein can jeopardize protection and result in penalties.

Aug. 9, 1974
(DATE)

Gerald W. Pepin
(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

EXHIBIT A

Origin and Breeding History of the Variety

I. Genealogy and Breeding Method.

"Derby" is a 12 clone synthetic variety. The 12 parent clones originated from a series of crosses made in early spring of 1971. The plants used in the crosses included two selections out of the variety "Pennfine"; L4U, a parent clone from "Manhattan" perennial ryegrass; and L4K and K79, two selections of perennial ryegrass collected by Dr. C. R. Funk.

Seed from the various crosses was germinated and used to establish a spaced-plant nursery of 5,500 plants in Brookston, Indiana during the summer of 1971.

Prior to pollination in 1972, the 12 parent clones of "Derby" were selected. The plants were dug and isolated in a greenhouse and allowed to interpollinate in isolation. The 12 parent clones were selected on the basis of early maturity, fine leaf texture, very dark green color, seed head production, and freedom from disease.

II. Subsequent Selection and Multiplication.

Polycross seed from each of the 12 parent clones in the greenhouse isolation was used for the initial multiplication of "Derby", which was designated as ISI-72E at this time.

Some polycross seed from each parent clone was germinated separately. Between 300 and 350 seedlings from each parent plant were transplanted into a spaced-plant nursery near Independence, Oregon during the fall of 1972. In the spring of 1973 the nursery was rogued of a small number of undesirable plants.

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and $250.00 fee to U.S. Dept. of Agriculture, Agricultural Marketing Service, Grain Division, 6525 Belcrest Road, Hyattsville, Maryland 20782. (See Section 180.175 of the regulations and rules of practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

5 Insert the date the applicant determined that he had a new variety based on the definition in Section 41 (a) of the Act and decision is made to increase the seed.

13a First, give the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method. Second, give the details of subsequent stages of selection and multiplication. Third, indicate the type and frequency of variants during reproduction and multiplication and state how these variants may be identified. Fourth, provide evidence on stability.

13b First, give any special characteristics of the seed and of the plant as it passes through the seedling stage, flowering stage and the fruiting stage. Second, describe the mature plant and compare it with a similar commercial variety grown under the same conditions, and indicate the differences.

13c A supplemental form will be furnished by the PVPO to describe in detail a variety for each kind of seed.

13d Provide complete data indicative of novelty. Seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty may be submitted. Seeds submitted may be sterile.

13e Indicate whether applicant is the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.

The remaining plants were allowed to interpollinate and the resulting seed from all plants was bulked and designated as breeder seed of ISI-72E perennial ryegrass.

Some breeder seed was used to plant a foundation field of about 10 acres in September 1973. The foundation planting was grown under Oregon certification as the stock seed increase of an experimental variety. About 7,700 pounds of foundation seed stock was harvested in July 1974.

III. Type, Frequency, and Identification of Variants.

The most conspicuous variation occurs in seed fields just prior to and during heading. About 25% of the plants exhibit a purple color in the stalk and flag leaf of the flowering culms. The purple coloring ranges from faint to a deep purple. The purple coloring in flowering culms is derived from three of the parent clones which exhibit a moderate degree of coloration. Random genetic recombination most likely causes the range in purple coloring that is observed in later generations.

A very small percentage of extreme dwarf-type plants has been observed. These plants are rare, probably occurring at a frequency of 0.1% or less. They do not set seed and do not survive the normal summer dry period in Oregon.

IV. Evidence of Stability.

Turf plots established from first, second and third generation seed have been compared in many trials. To date, the performance of turf plots from all generations has been identical. This indicates that "Derby" is stable and does not change from one generation to the next.

EXHIBIT B

Botanical Description of the Variety

The seed of "Derby" is similar in appearance to all perennial ryegrass, except that it is apparently smaller in size. "Derby" seed was the smallest of all seed tested (Table 1).

Seedlings of "Derby" are similar to the turf-type perennial ryegrass varieties Pennfine and Manhattan. "Derby" seedlings differ only in being slightly darker. Seedlings of the above three varieties differ from those of the older hay and pasture-type varieties such as Linn, Pelo, Compas, etc.; in being shorter, less upright, and having a slower rate of vertical growth.

At maturity "Derby" plants are densely tufted perennials about 60 cm. high. Culms are mostly spreading, slender, 2-4 noded, and smooth. Flag leaves are mostly green with about 25% having a purple color ranging in intensity from faint to deep purple. The flag leaf blades average about 92 mm. in length and 2 to 3 mm. wide. Seed spikes average 15 to 20 cm. long, mostly curved, stiff, green or purplish. Under Oregon conditions, 50% heading normally occurs around the 18th of May and 50% anthesis around the 5th. of June.

"Derby" most closely resembles the cultivar Pennfine. These two cultivars differ in the following respects:

The seed of "Derby" is apparently smaller than Pennfine. The 1000 seed weight of "Derby" seed lots ranged from 1.102 to 1.553 g. while various Pennfine lots ranged from 1.152 to 2.453 g. (Table 1).

As summarized in Table 2, mature plants of "Derby" averaged about the same as those of Pennfine in dates of heading and anthesis, Flag leaf length, angle of growth, plant height, and leaf blade width. In turf, Pennfine was significantly more dense than "Derby" but "Derby" was darker in color (Table 3). In cold temperature tolerance, "Derby" averaged more cold tolerant than Pennfine (Table 4).

Application No. 7500009 9/3/75
'Derby'

U.S. DEPARTMENT OF AGRICULTURE
Agricultural Marketing Service
Grain Division

Objective Description of Cultivars
RYEGRASS
(Lolium spp.)

1. SPECIES:

[2] 1=L. multiflorum (annual or Italian: includes Westerwoldicum)
2=L. perenne (perennial) 3=L. rigidum (includes Wimmera)
4=Hybrid (of species) _____ 5=Other (specify) _____

2. PLOIDY:

[1] 1=Diploid 2=Tetraploid 3= Other (specify) _____

3. DURATION:

[3] 1=Annual or biennial 2=Short lived perennial (3-4 years)
3=Perennial (more than 4 years)

STANDARD CULTIVARS

1=Gulf 2=Wimmera 62 3=Linn 4=Pelo
5=Norlea 6=Aberystwyth S-23 7=Manhattan 8=Pennfine

4. MATURITY (50% Headed): (Use standard cultivars from above.)

[3] 1=Very early 3=Early 5=Medium 7=Late 9=Very late
[1][8] Days earlier than [7] standard cultivar
[0][5] Days later than [3] standard cultivar

5. MATURE PLANT HEIGHT: (Use standard cultivars from above.)

[0][6][0] cm. High [0][0][3] cm. Shorter than [7] standard cultivar
[0][0][1] cm. Taller than [8] standard cultivar

6. PERCENT WINTER DAMAGE (estimated as percent of the area appearing dead):
(Use standard cultivars from above.)

[4][6] Percent damage of application cultivar
[5][5] Percent damage of [8] standard cultivar

7. TURF DENSITY: (Use standard cultivars from above.)

[1][4][0] Tillers per 100 sq. cm.
[2][8] Less tillers per 100 sq. cm. than [8] standard cultivar
[2][8] More tillers per 100 sq. cm. than [3] standard cultivar

8. FLAG LEAF (at full growth): (Use standard cultivars from above.)

[0][0][9] cm. Length(from ligule to tip)
[0][1][3] MM Shorter than [7] standard cultivar
[0][0][1] MM Longer than [3] standard cultivar
[ ][ ][ ] mm. Width (at widest point)
[ ][ ][ ] mm. Narrower than [ ] standard cultivar
[ ][ ][ ] mm. Wider than [ ] standard cultivar
[ ] Flag leaf at boot stage: 1=Deflexed 3=Recurved 5=Horizontal
7=Semi-erect 9=Erect

9. LEAVES:

[ ] Vernation: 1=Leaves rolled in young shoots
2=Leaves semi-rolled (folded with rolled edges)
3=Leaves folded in young shoots
[ ][ ][ ] % Plants with anthocyanin in lower leaf sheath
[3] Foliage color: 1=yellow green 2=medium green 3=blue green

10. SPIKE:

[1][7][3] mm. Spike length (tip to internode below lowest floret)
[1][5] mm. Shorter than [8]
[ ][ ] mm. Longer than [ ]
(Use standard cultivars from above.)

EXHIBIT D

Data Indicative of Novelty

"Derby" most closely resembles the cultivars Pennfine and to a lesser extent Manhattan, both of which were used in some of the crosses from which the 12 parent clones were derived.

Maturity data (Table 2) from 1975 indicates that "Derby" is about the same as Pennfine and about 17 days earlier than Manhattan.

In turf, "Derby" has a darker green color than both Pennfine and Manhattan. It appears to have a darker color than any perennial ryegrass commercially available at this time (Table 3). Manhattan and Pennfine are significantly more dense than "Derby".

Cold temperature tests showed "Derby" to be more cold tolerant than Pennfine but less cold tolerant than Manhattan (Table 4).

TABLE 1

Perennial Ryegrass 1000 Seed Weights, in Grams.

Variety	Weight (g)	Origin and Year
Eton	1.249	Test plot 1974
Linn	1.470	" " "
Barenza	1.212	" " "
Derby	1.102	" " "
Pennfine	1.321	" " "
Manhattan	1.766	" " "
Derby	1.111	Breeder Seed, 1973
Derby	1.553	Certified Seed, 1974
Derby	1.539	Certified Seed, 1975
Pennfine	2.453	Foundation Seed, 1972
Pennfine	2.007	Certified Seed, 1973
Pennfine	1.993	Certified Seed, 1974
Pennfine	1.152	Certified Seed, 1975
Manhattan	1.518	Certified Seed, 1973

10. SPIKE (continued):

[ ] mg. per ten spikes (trimmed to internode below lowest floret)
[ ] mg. lighter per ten spikes than } Use standard cultivars from above.
[ ] mg. heavier per ten spikes than }
[ ] Florets per spikelet

Percentage of plants with:

Rachis: [ ] % smooth [ ] % rough
Spike color: [ ] % green [ ] % purple
Lemma: [0 0 0] % awned [0 0 0] mm. awn length

[ ] mm. glume length
[2] 1=Spikelet length nearly equal to outer glumes
2=Spikelet length much longer than outer glumes

11. COLEOPTILE:

[ ] %Plants with anthocyanin in coleoptile

12. ANTHER COLOR:

[ ] % Plants with white anthers [ ] % Plants with yellow anthers
[ ] % Plants with purple anthers

13. ROOT AND PLANT CHARACTERS:

[0 9 0] % Plants with prostrate growth habit
[0 1 0] % Plants with upright growth habit
[0 0 0] % Plants with fluorescent roots

14. SEED:

[1.5 5] mg. per 1,000 seed [0 5 6] mm. total length of 10 seeds [0 1 3] mm. total width of 10 seeds

15. DISEASE (0=Not tested, 2=Highly susceptible, 4=Moderately susceptible, 6=Moderately resistant, 8=Highly resistant):

[4] Crown rust (Puccinia coronata)
[ ] Leaf spot (Helminthosporium)
[0] Snow mold (Typhula)
[ ] Dollar spot (Sclerotinia)
[8] Mildew
[0] Red thread (Corticium)
[6] Brown patch (Rhizoctonia)
[ ] Other (specify) _____

16. INSECT (0=Not tested, 2=Highly susceptible, 4=Moderately susceptible, 6=Moderately resistant, 8=Highly resistant):

[ ] Specify _____

17. GIVE RESEMBLANCE VALUE IN LEFT COLUMN AND VARIETY IN RIGHT COLUMN FOR VARIETY WITH WHICH COMPARISON IS MADE: (1=Less than, 2=Same as, 3=More erect, more resistant, denser, more persistent, darker or greater height.)

Resemblance	Character	Similar variety
2	Plant habit (erectness)	Pennfine
2	Tillering	"
3	Winter hardiness	"
2	High temp.stress resistance	"
2	Turf persistence	"
3	Plant color	"
2	Vertical seedling growth rate	"
1	Crown density	"
2	Mower shredding resistance	"

18. GIVE AREA OF ADAPTATION AND INTENDED USE: Cool Season Perennial Turfgrass

19. GIVE AREA TEST RESULTS PRESENTED FROM: Western Oregon unless otherwise noted.

COMMENTS:

TABLE 2

Lolium Cultivar Comparisons 1975

	1	2	3	4	5	6	7	
	Date of 50% heading 1975	Date of 50% Anthesis 1975	Flag Leaf Length (MM)	Angle of Growth at Anthesis	Plant Height after Anthesis (CM)	Turf Density (Tillers /100CM)	Leaf Blade Width (MM) in Turf	
DERBY	5/18	6/5	92	27°	~~59~~ 60	140	2.2	
PENNFINE	5/18	6/4	92	29°	~~60~~ 59	168	2.3	
MANHATTAN	6/5	6/21	105	35°	62	177	2.2	
LINN	5/14	6/2	92	44°	61	112	2.5	
PELO	6/5	6/23	121	40°	70	-	-	
S.23	6/7	6/26	117	38°	67	-	-	
LSD.05	2.6					27		

Data in columns 1 through 5 taken from spaced-plants grown in Scio, Oregon.

Data in columns 6 and 7 taken from turf plots in Tangent, Oregon.

Cut at 1.25 inches.

TABLE 3

Color Intensity of Perennial Ryegrass Turf

9 = darkest color

	College Park, Md. 6/27/74		Brookston, Ind. 5/2/74	11/7/73	North Albany, Or Winter 1973-74	Tangent, Or Dec. 1975
	High Cut 2.5 in.	Low Cut 1.5 in.	1.5 in.		2.0 In	
Derby	7.0	7.3	7.0	8.2	8.0	8.3
Manhattan	5.7	5.7	5.0	6.8	7.5	6.3
Pennfine	6.3	6.7	6.8	8.0	-	7.0
Eton	5.3	4.7	6.7	5.7	8.0	-
Game	5.0	5.0	2.5	7.2	6.0	-
Compas	3.3	3.0	3.5	5.8	6.0	-
NK 200	6.0	4.3	-	-	-	-
Linn	-	-	3.2	6.0	4.5	5.3
LSD .05	-	-	-	-	-	1.0

U.S DEPARTMENT OF AGRICULTURE | DATE

REFERENCE SLIP | 11.17.76

10

☐ ACTION ☐ NOTE AND RETURN

☐ APPROVAL ☐ PER PHONE CALL

☐ AS REQUESTED ☐ RECOMMENDATION

☐ FOR COMMENT ☐ REPLY FOR SIGNATURE OF

☐ FOR INFORMATION ☐ RETURNED

☐ INITIALS ☐ SEE ME

☐ NOTE AND FILE ☐ YOUR SIGNATURE

REMARKS The variance of 25% purple stem and leaf- sheath x pollinated crop such as a grass (sorghum) can be tolerated. The variance comply with the requirement of 7 CFR 41(a)(2).

FROM

GPO 948—16—83171 | FORM AD-514 (8-64)

TABLE 4

LOW TEMPERATURE INJURY IN

PERENNIAL RYEGRASS CULTIVARS.

	Temperature Range (Farenheit)				
CULTIVAR	19° to 15°	14° to 10°	9° to 5°	4° to 0°	Average
DERBY	7.2	4.0	2.0	0.7	4.5
ETON	8.4	5.7	4.0	0.3	5.7
MANHATTAN	7.6	5.3	2.0	0.7	5.0
PENNFINE	6.4	3.0	1.0	0	3.6
LINN	4.8	1.3	0.5	0	2.4

Plugs were dug from partially dormant turf plots on 20 February 1974. The plugs were kept at 40°F for 1 day and then put in a cold chamber that slowly dropped the temperature. As the temperature decreased, plugs were removed at periodic intervals, thawed at 40° and then put in a greenhouse to recover. Two weeks later the percent cold temperature kill was visually estimated on a 0 to 9 scale with 9 being no damage and 0 being 100% kill.

EXHIBIT E

Statement of Applicant's Ownership

International Seeds, Inc., Halsey, Oregon is the sole, original, and first breeder of the "Derby" variety of Perennial ryegrass for which it solicits a certificate of protection.

to corn and heavy legumes. A unique recirculation system and built-in dust collectors have been designed to save energy and heating costs and to provide a safe and clean working environment. The Seedmaster Compact S-2000 was recently introduced on the world market.

Andren has received numerous awards and honors for new designs and refinements of old ones, including gold medals from the Salon des Inventeurs in Brussels.

FS dedicates plant

FS Services, Inc., Bloomington, Illinois, held dedication ceremonies February 28 for a new seed plant at Williams, Iowa. Robert H. Lounsberry, Iowa secretary of agriculture, who addressed the group, headed the list of guests composed of directors and employees of the Iowa Farm Bureau and FS service companies.

Construction on the new $3.5 million plant was started in September, 1977. The first corn was received for processing September 19, 1978.

Energy and operating cost savings were high on the list of priorities in the design of the new plant. For example, fans in the dryer building are powered by four eight-cylinder 180 horsepower engines in place of the usual electric motors. Heat from the engine exhaust and radiators of these engines is directed into the drying airstream, thus using heat that would otherwise be wasted.

Soybean seed is also cleaned and bagged at the Williams plant after the year's corn crop has been handled. Production capacity of soybean seed for the first year of operation is expected to be 50,000 bags of seed beans. This capacity will be significantly increased in the future.

The new plant will also serve as headquarters for all of the FS seed research in Iowa. The research program was formerly located at Garner, Iowa.

Fifteen people will be employed year round at the Williams plant. Additional employees will be hired during corn detasseling and harvesting season.

The opening of the seed plant at Williams is a continuation of the FS seed program which began as a result of a merger with Producers Seed Company in 1965. FS also operates seed corn plants at Piper City and Cisco, Illinois.

Seedsmen's Digest, Vol. 30, No. 6, pg 52. June 1979.

BETTER CROPS cont. from previous page.

cover, firmness and size. Viscosity is higher. Excellent yield potential. VF resistant.

BLOCKY TYPES

Castlex 499—Midseason maturity. Plants are medium sized, compact, with excellent foliage cover. The leaves are dark green, similar to UC 82. The fruits are deep globe, blocky shaped, medium small in size, uniform ripening, good internal color, concentrated set and very firm. Excellent vine-holding abilities. VF resistance.

NK INTRODUCES SALT-TOLERANT TURFGRASS VARIETY

Northrup King Co. (Minneapolis) is introducing a new, highly salt-tolerant turfgrass. The variety, "Fults" Puccinellia distans, was developed by Professor Jesse Fults, Colorado State University.

A spokesman for the seed firm reports that "Fults" is an exceptional new variety for use along highways and boulevards, or any area where salt hazard or salty soils are a problem.

In trials, "Fults" has shown excellent persistance on salty soils, maintaining a dark green dense turf where other grasses fail to establish. As the salt concentration decreases, "Fults" provides an even transition to areas dominated by other grasses.

"Fults", a dwarf, non-creeping perennial, can be maintained with or without mowing. The low-growing turf reseeds its stand readily to stabilize barren roadside areas.

"Fults" Pucinnellia distans is being marketed by Northrup King's Professional Turf Products Division as a straight variety and in specially blended mixtures.

NK's Professional Turf Products Division markets improved varieties of turfgrass seed and turfgrass mixtures for professional users.

DERBY RYEGRASS GETS CANADIAN LICENSE

Derby turf-type perennial ryegrass has been licensed for sale in Canada according to Harry Stalford, Products Manager, International Seeds, Inc.(Halsey, OR).

Stalford said that license No. 1873 was issued for Derby after receiving the recommendations of turfgrass researchers in Ottawa, Ontario and Agassiz, B.C.

Derby is a 12 clone synthetic variety developed by Dr. G. W. Pepin of International Seeds. It is registered (P.V.A. No. 7500009) with the U.S. Plant Variety Protection Act.

PICKSEED ANNOUNCES NEW GRASS MIXTURES

Otto Pick & Sons Seeds Ltd. (Richmond Hill, Ont.) introduces two new

(1910) perennial teosinte was a tetraploid. Corn is a diploid; a cross between the two resulted in a triploid which was sterile.

Some serious questions stand between the discovery and the development of perennial corn for the Midwest, however.

First, the fact that this particular teosinte is perennial in Mexico does not mean it would be winter-hardy in a Midwestern climate, even though the plants are perennial at elevations up to 10,000 feet in the state of Jalisco.

Second, the characteristics of teosinte are so different from those of corn that transferring desirable characteristics from the teosinte into corn is both difficult and time-consuming. The teosinte is adapted to a completely different environment than is Corn Belt corn. Futhermore, teosinte behaves essentially like a wild species. It produces very little grain and the plants are completely lacking in those agronomic traits essential to mechandized agriculture.

Third, even if it were possible to segregants might be identified which would be useful in improving corn. To date, said Duvick, none of these experiments has yielded beneficial results.

Two are appointed at Abbott & Cobb, Inc.

Abbott & Cobb, Inc., Trevose, Pennsylvania, has announced two appointments. Arthur Abbott, president, said Earl Hess has been named operations manager while Irv Breber has been named research coordinator.

As operations manager, Hess will coordinate internal activities at Abbott and Cobb's new warehouse facility at Trevose. He has been active in the garden seed industry for over 11 years and was formerly production and purchasing manager for W. Atlee Burpee Company.

As research coordinator, Breber will concentrate on new variety development and product improvement for the company, which specializes in fresh market varieties. He has worked in the garden seed industry for over 20 years.

MCIA elects officers, passes out the awards

John L. Friederichs, Foxhome, Minnesota, has been elected president of the Minnesota Crop Improvement Association. He was elected at a board of directors meeting January 9. He replaces Harold S. Olson, who served as president for the past two years. Friederichs has served on the board of directors since 1971 and as vice president since 1977.

Other officers elected are Larry Stevens, Amboy, vice president; Lynn Anderson, Moorhead, treasurer; and Lawrence H. Smith, St. Paul, secretary. H.W. Johnson was renamed a member of the executive committee. Harley J. Otto, executive vice president, will continue as Minnesota's representative to the board of directors of the Association of Official Seed Certifying Agencies.

Elections were also held for members of the board of directors January 8, during the annual meeting of the association. Named to three-year terms were Evald Anderson, Dassel, and Ron Rickers, Wadena. They replace Harold Olson and Preston King. Jack Cashman, Owatonna, was elected to his third three-year term and Dr. Herbert W. Johnson, St. Paul, was re-elected for a one-year term on the board.

About 350 people were in attendance for the annual awards banquet during the convention. Seven awards were presented at the dinner, as follows: Premier Seed Grower Awards went to Ernest N. Larson, Gibbon; Evand Anderson, Dassel; and Reid Buer, Canby. Victor P. Kath, Moorhead, was named Premier Seedsman. Ed Fier, New Ulm, and Lambert Schilling, Frazee, were made Honorary Premier Seed Growers. Meyer's Seeds, Elgin, was named Mr. Crop Improvement.

moving up from executive vice president to the new post, Coker succeeds Robert R. Coker, now honorary chairman of the board and former president of the firm.

Other new officers include Peter Nelson of the German seed company KWS, named chairman of the board; Allen E. Brock, corporate secretary and controller; and Richard E. Gettys, corporate vice president. Gettys will continue as director of Coker's hybrid corn research division.

The new appointments result from the recent purchase of Coker's Pedigreed Seed Company by KWS Kleinwanzelbener Saatzucht AG, a leading seed breeding company in Einbeck, West Germany. Both firms are family-run companies.

Pressly Coker joined Coker's Pedigreed Seed Company in 1962 as assistant general farm manager. Most recently, he has been responsible for the company's seed production and conditioning operations throughout Coker's sales territory. He is a graduate of Virginia Polytechnic Institute with a master's degree from Cornell University.

Coker is a past president of the Southern Seedsmen's Association and currently the second vice president of the American Seed Trade Association.

Derby ready for sale on Canadian license

Derby turf-type perennial ryegrass has been licensed for sale in Canada. Harry Stalford, products manager, International Seeds, Inc., Halsey, Oregon, made the announcement.

Stalford said license #1873 has been issued for Derby, after the variety received the recommendations of turfgrass researchers in Ottawa, Ontario, and Agassiz, British Columbia.

Derby is a 12-clone synthetic variety developed by Dr. G.W. Pepin of International Seeds. It is registered with the U.S. Plant Variety Protection Office, certificate number 7500009.

is going rapidly for the trade show to be held at the convention of the New York State Nurserymen's Association in Niagara Falls on July 9-12.

An article on page 1 of the February 7 issue of SEED TRADE NEWS said 23 booths had been reserved. Margaret Herbst, executive secretary, advises that the number is well over 100 booths as of March 1, and may well be approaching 123.

Further details on the July convention and trade show may be obtained from Margaret Herbst at 101 Park Avenue, New York, New York 10017, (212) 685-4579.

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Golden Harvest names Brokish to research

Golden Harvest Seeds, Inc., Bloomington, Illinois, has announced the appointment of Harold A. Brokish to the staff of its central research station at Clinton, Illinois.

Brokish, who holds two degrees from the University of Wisconsin, worked for six years in the College of Agriculture's corn breeding and improvement program at the University of Wisconsin, before going to Latin America where for two years he developed and administered an agricultural program.

At Clinton, Brokish's research for the central Corn Belt will concentrate on developing resistance to damage from insects and disease, including second brood European corn borers; developing faster drying, stronger-standing hybrids with improved root and stalk strength to make field drying practical; and developing new varieties with more efficient interception of solar energy for increased yields.

Other Golden Harvest breeding nurseries and research stations are located at Waterloo, Nebraska; Platteville, Wisconsin; Eldred, Illinois; Jamestown, Ohio, and Pikeville, North Carolina.

TURF TIPS

Margaret Herbst

I attend many meetings during the year but I was very much impressed by the well-run educational conference held recently by the U.S. Golf Association Green Section in the Grand Ballroom of the Hotel Plaza in New York City. On a day that local areas in and around New York and New Jersey were flooded, the main message of the conference stressed water shortage and the need for conservation of water on golf courses, in the home, and, of course, for home lawns.

Perhaps not everyone is aware of a fact well stated by Dr. James R. Watson, vice president of the Toro Co., Minneapolis, Minnesota, that the amount of water on this planet is constant and will be the same in the year 2,000. The tragic part is that we are polluting faster than nature can purify.

New methods of watering are being sought to conserve water. The use of recycled water is one form of conservation. Treated sewage effluent is another.

Watson commented that more golf greens were killed with improper irrigation in 1977 because there is a large gap between what we know and what we practice. If we operate as if we were in a drought and establish watering priorities and sound irrigation practices, we will be cooperating in alleviating a serious problem, Watson said.

Dr. L. Arthur Spomer, associate professor, plant physiology, University of Illinois, Urbana, Illinois stressed the fact that plants require a tremendous amount of water. However, the amount can be nebulous, and varies with varieties and cultural practices as well as the purpose of the grass.

Dr. Albert E. Dudeck, associate professor, turfgrass science, University of Florida, Gainesville, Florida, stated that water recycling is with us today and will be routine practice in the next fifty years. He made no bones about it; we will be drinking sewage effluent in the future, and there may not be enough to go around.

With all of these predictions, and facts of life, golf course superintendents were urged to water only as needed. Golf club members came in for criticism because of their insistence on the lushest possible turf. One of the directors of the Green Section summed it up by saying, "Bring golf back to a good playing area, rather than a green area."

International Seeds offers Derby brochure

A four-color brochure detailing the development, adaptability, seeding rates, fertilization requirements and other pertinent information on Derby turf-type perennial ryegrass is available from International Seeds, Inc., Halsey, Oregon.

Harry Stalford, products manager, said the brochure also contains recent test data comparing Derby's performance against other well-known turf-type ryegrasses both in permanent turf and as a winter grass in the southern United States.

Stalford said the brochure includes results from Arizona, California, Kentucky, Mississippi, South Carolina, Texas, Washington, Ohio, New Jersey and Kansas.

Free copies of the brochure may be obtained by writing Stalford at International Seeds, Inc., P.O. Box 168, Halsey, Oregon 97348.